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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Richard Alan Dayan

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LENOVO (US) IP Law

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EXAMINER

HENNING, MATTHEW T

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 10/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/841,503	DAYAN ET AL.	
	Examiner	Art Unit	
	Matthew T. Henning	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-62 is/are rejected.
- 7) ☒ Claim(s) 38-49 and 51-62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1 This action is in response to the communication filed on 8/8/2006.

2 **DETAILED ACTION**

3 ***Continued Examination Under 37 CFR 1.114***

4 A request for continued examination under 37 CFR 1.114, including the fee set forth in
5 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is
6 eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e)
7 has been timely paid, the finality of the previous Office action has been withdrawn pursuant to
8 37 CFR 1.114. Applicant's submission filed on 8/8/2006 has been entered.

9 ***Response to Arguments***

10 Applicants' arguments filed 8/8/2006 have been fully considered but they are not
11 persuasive. Applicants argues primarily that:

- 12 a. Gafken teaches away from storing the BIOS in a hard drive.
13 b. Hayashi does not teach individual verification of the source of each entry.

14 Regarding applicants' argument a., that Gafken teaches away from storing the BIOS in a
15 hard drive, the examiner does not find the argument persuasive. First, Gafken teaches that the
16 specific embodiment disclosed is not meant to be limiting and the updating procedure can be
17 applied to different data and different storage mediums, as can be seen in Col. 14 Paragraph 6.
18 Furthermore, simply because Gafken did not specifically disclose storing the BIOS in the hard
19 drive, does not mean he is teaching away from the combination, but rather shows that in the
20 preferred embodiment of Gafken the BIOS is stored in flash memory. As such, the examiner
21 contends that a *prima facie* case of obviousness has been established and therefore has
22 maintained the rejection.

1 In response to applicants' argument b., that the references fail to show certain features of
2 applicant's invention, it is noted that the features upon which applicant relies (i.e., individual
3 verification of the source of each entry) are not recited in the rejected claim(s). Although the
4 claims are interpreted in light of the specification, limitations from the specification are not read
5 into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
6 Rather, the claim simply requires that the source of each entry be verified. The signature
7 verification of Gafken, which verifies the source of the entire upgrade through digital signatures
8 as can be seen in Col. 12 Paragraph 7 – Col. 13 Paragraph 1, meets these limitations and as such
9 the examiner does not find the argument persuasive.

10 All rejections and objections not specifically set forth below have been withdrawn.

11 Claims 37-62 have been examined, and claims 1-36 have been cancelled.

12 ***Claim Objections***

13 Claims 38-49 and 51-62 are objected to because of the following informalities: The
14 limitation "the protected partition is found match a portion" in claims 38 and 51 is not
15 grammatically correct. The examiner suggests changing the claim to recite "the protected
16 partition is found to match a portion" in order to be grammatically correct. Appropriate
17 correction is required.

18
19 ***Claim Rejections - 35 USC § 103***

20 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all
21 obviousness rejections set forth in this Office action:

22 *A patent may not be obtained though the invention is not identically disclosed or described as set forth*
23 *in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art*
24 *are such that the subject matter as a whole would have been obvious at the time the invention was made to a*

1 *person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated*
2 *by the manner in which the invention was made.*

3
4 Claims 37, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gafken
5 (US Patent Number 6,026,016), further in view of Arnold et al. (US Patent Number 5,128,995)
6 hereinafter referred to as Arnold, and further in view of Menezes et al. ("Handbook of Applied
7 Cryptography") hereinafter referred to as Menezes.

8 Regarding claim 37, Gafken disclosed a method for providing a capability to securely
9 update information stored in a plurality of computer systems (See Gafken Fig. 5), where in the
10 method comprises: forming a protected partition within each of the computer systems (See
11 Gafken Col. 4 Paragraphs 3-4); storing within nonvolatile storage (See Gafken Fig. 1 Element
12 118) of each computer system in the plurality of computer systems, an operating system (See
13 Gafken Fig. 1 Element 150), and an initialization routine (See Gafken Fig. 1 Element 151) to
14 execute within a processor of the computer system after power on of the computer system (See
15 Gafken Col. 3 Paragraph 2 Lines 1-4), wherein the initialization routine includes instructions
16 causing the protected partition to be locked before the operating system is loaded (See Gafken
17 Col. 13 Paragraph 9 – Col. 14 Paragraph 2), and wherein instructions causing information stored
18 within a predetermined location to be written within the protected partition after predetermined
19 security procedures have occurred but before the protected partition is locked (See Gafken Col.
20 13 Paragraph 8); establishing a network connecting each computer system in the plurality of
21 computer systems with a server system (See Gafken Col. 3 Paragraph 6 and Col. 12 Paragraph
22 7); generating an update partition file within the server system (See Gafken Col. 12 Paragraph 7
23 – Col. 13 Paragraph 1); transmitting the update partition file over the network to each computer
24 system in the plurality of computer systems (See Gafken Col. 12 Paragraph 7); and storing the

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1 update partition file within the predetermined location of each computer system in the plurality
2 of computer systems (See Gafken Col. 12 Paragraph 5), however, Gafken failed to disclose the
3 protected partition being within a hard drive, or a setup password stored in the nonvolatile
4 storage for use in the predetermined security procedures. However, Gafken did disclosed that
5 “although the example...describes a flash memory used to store...a BIOS...other types of
6 nonvolatile memories storing other types of information may be used” (See Gafken Col. 14
7 Paragraph 6).

8 Arnold teaches that a BIOS can be stored in a protected partition of a hard drive (See
9 Arnold Col. 2 Line 63 – Col. 3 Line 12).

10 It would have been obvious to the ordinary person skilled in the art at the time of
11 invention to employ the teachings of Arnold in the BIOS updating system of Gafken by storing
12 the BIOS in a protected partition of a hard drive instead of flash memory. This would have been
13 obvious because the ordinary person skilled in the art would have been motivated to provide a
14 fast and efficient way to store BIOS code.

15 Menezes teaches that providing a sequence number (password), stored and updated at
16 both a receiver and a sender, in a digital signature of the sender, protects the signature against
17 replay attacks (See Menezes Page 399 Section (ii)).

18 It would have been obvious to the ordinary person skilled in the art at the time of
19 invention to employ the teachings of Menezes to the validation signatures of Gafken by
20 providing a sequence number in the signature of the update image. This would have been
21 obvious because the ordinary person skilled in the art would have been motivated to provide
22 protection against illicitly signed updates.

1 Regarding claim 50, Gafken disclosed an interconnected system for providing
2 updated information in a secure manner (See Gafken Abstract and Fig. 5), wherein the
3 interconnected system comprises: a network (See Gafken Col. 3 Paragraph 6 and Col. 12
4 Paragraph 7); a server system connected to the network and programmed to generate an update
5 partition file and to transmit the update partition file over the network (See Gafken Col. 12
6 Paragraph 7 – Col. 13 Paragraph 1); a computer system connected to the network, wherein the
7 computer system includes a processor (See Gafken Fig. 1), non-volatile data storage including a
8 protected partition (See Gafken Fig. 1 Element 115 and Col. 4 Paragraphs 3-4), wherein the
9 processor is programmed to receive the update partition file from the network and to store the
10 update partition file in a predetermined location within the nonvolatile data storage outside the
11 protected partition (See Gafken Col. 12 Paragraphs 5-7), and wherein the nonvolatile data
12 storage stores an operating system and an initialization routine executing within the processor
13 after power on of the computer system (See Gafken Fig. 1 Element 118 and Col. 3 Paragraph 2
14 Lines 1-4), including instructions causing the protected partition to be locked before the
15 operating system is loaded (See Gafken Col. 13 Paragraph 9 – Col. 14 Paragraph 2), and
16 instructions causing information stored within the predetermined location to be written within the
17 protected partition after predetermined security procedures have occurred but before the
18 protected partition is locked (See Gafken Col. 13 Paragraph 8), but Gafken failed to disclose the
19 protected partition being within a hard drive, or a setup password stored in the nonvolatile
20 storage for use in the predetermined security procedures. However, Gafken did disclosed that
21 “although the example...describes a flash memory used to store...a BIOS...other types of

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1 nonvolatile memories storing other types of information may be used” (See Gafken Col. 14
2 Paragraph 6).

3 Arnold teaches that a BIOS can be stored in a protected partition of a hard drive (See
4 Arnold Col. 2 Line 63 – Col. 3 Line 12).

5 It would have been obvious to the ordinary person skilled in the art at the time of
6 invention to employ the teachings of Arnold in the BIOS updating system of Gafken by storing
7 the BIOS in a protected partition of a hard drive instead of flash memory. This would have been
8 obvious because the ordinary person skilled in the art would have been motivated to provide a
9 fast and efficient way to store BIOS code.

10 Menezes teaches that providing a sequence number (password), stored and updated at
11 both a receiver and a sender, in a digital signature of the sender, protects the signature against
12 replay attacks (See Menezes Page 399 Section (ii)).

13 It would have been obvious to the ordinary person skilled in the art at the time of invention to
14 employ the teachings of Menezes to the validation signatures of Gafken by providing a sequence
15 number in the signature of the update image. This would have been obvious because the
16 ordinary person skilled in the art would have been motivated to provide protection against
17 illicitly signed updates.

18
19 Claim 38-43 and 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over
20 the combination of Gafken, Arnold, and Menezes as applied to claims 37 and 50 above, and
21 further in view of Hasbun et al. (U.S. Patent Number 6,088,759) hereinafter referred to as
22 Hasbun.

1 Regarding claims 38 and 51, the combination of Gafken, Arnold, and Menezes disclosed
2 after determining that said update partition is stored within said computing system for updating
3 said protected partition, writing a portion of said update partition file to said protected partition
4 (See Gafken Col. 13 Paragraph 8); and locking said protected partition to prevent further
5 modification of information stored within said protected partition (See Gafken Col. 13 Paragraph
6 9 – Col. 14 Paragraph 1), but failed to disclose overwriting similar parts and appending new
7 parts.

8 Hasbun teaches that a bios update can be allocated into virtual blocks so that the blocks
9 can be updated individually without having to erase the entire memory first (See Hasbun Col. 5
10 Paragraph 6 – Col. 6 Paragraph 2 and Col. 12 Line 59 – Col. 16 Line 27). Hasbun also teaches
11 that new blocks should be allocated from existing free memory (See Hasbun Col. 7 Paragraph 2).

12 It would have been obvious to the ordinary person skilled in the art at the time of
13 invention to employ the teachings of Hasbun to the bios updating system of Gafken, Arnold, and
14 Menezes by updating each update part one at a time. This would have been obvious because the
15 ordinary person skilled in the art would have been motivated to provide a safe method for
16 updating a bios without risking loss of the entire bios in the event of a power failure.

17 Regarding claims 39 and 52, the combination of Gafken, Arnold, Menezes, and Hasbun
18 disclosed that a flag bit is set in non-volatile storage within said computing system when said
19 update partition file is stored at a predetermined location in non-volatile storage within said
20 computing system (See Gafken Col. 13 Paragraphs 3-4), and determining whether said update
21 partition is stored within said computing system for updating said protected partition is

1 performed by determining whether said flag bit is set (See Gafken Col. 13 Paragraph 7 and Fig. 5
2 Step 550).

3 Regarding claims 40 and 53, the combination of Gafken, Arnold, Menezes, and Hasbun
4 disclosed that after determining that said update partition file is stored within said computing
5 system for updating said protected partition, verifying whether said update partition file has been
6 generated by a trusted server system, and said portion of said update partition is written to said
7 protected partition only following verification that said update partition file has been generated
8 by a trusted server system (See Gafken Col. 12 Paragraph 6 – Col. 13 Paragraph 1 and Figure 6).

9 Regarding claims 41 and 54, the combination of Gafken, Arnold, Menezes, and Hasbun
10 disclosed that verification that said update partition file has been generated by said trusted server
11 system includes: forming a first message digest by applying a hash algorithm to a portion of said
12 update partition file; forming a second message digest by decrypting a digital signature within
13 said update partition file using a public key of said trusted server system; and determining that
14 said first and second message digests are identical (See Gafken Col. 12 Paragraph 7 Line 10 –
15 Col. 13 Line 2).

16 Regarding claims 42 and 55, the combination of Gafken, Arnold, Menezes, and Hasbun
17 disclosed the predetermined setup procedures include verifying that said update partition file has
18 been generated by said trusted server system includes signing an encrypted portion of said update
19 partition file with a public key of said trusted server system, and said encrypted portion of said
20 update partition file has been prepared by signing, with a private key of said trusted server
21 system, a result of the application of an algorithm to data including a version of said setup

1 password accessed by said trusted server system (See the rejection of claim 37 above and Col. 12
2 Paragraph 7 – Col. 13 Paragraph 1).

3 Regarding claims 43 and 56, the combination of Gafken, Arnold, Menezes, and Hasbun
4 disclosed that the data includes said version of said setup password appended to a portion of said
5 update partition file (See rejection of claim 5 above), said algorithm is a hash algorithm
6 generating a message digest (See Gafken Col. 12 Paragraph 7 – Col. 13 Paragraph 1), and
7 verifying that said update partition file has been generated by said trusted server system includes
8 applying said hash algorithm to said setup password stored within said computing system
9 appended to a portion of said update partition file to generate a first version of a message digest
10 and comparing said first version of said message digest with a second version of said message
11 digest obtained by signing said encrypted portion of said update partition file (See Gafken Col.
12 12 Paragraph 7 – Col. 13 Paragraph 1).

13 Claims 44-48 and 57-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over
14 the combination of Gafken, Arnold, Menezes, and Hasbun as applied to claims 38 and 51 above,
15 and further in view of Hayashi et al. (US 2001/0039651 A1) hereinafter referred to as Hayashi.

16 Regarding claims 44 and 57, the combination of Gafken, Arnold, Menezes, and Hasbun
17 disclosed digitally signing the update file and verifying the signature prior to updating the
18 partition (See Gafken Col. 12 Paragraph 7 – Col. 13 Paragraph 1), but the combination of
19 Gafken, Arnold, Menezes, and Hasbun failed to disclose encrypting portions of the file
20 separately and verifying each portion individually.

21 Hayashi teaches a method for providing a variety of software safely by breaking the file
22 into pieces and decrypting each piece separately (See Hayashi Page 1 Col. 2 Paragraphs 3-10).

1 It would have been obvious to the ordinary person skilled in the art at the time of
2 invention to employ the teachings of Hayashi to the updating system of the combination of
3 Gafken, Arnold, Menezes, and Hasbun by encrypting parts of the file separately from the other
4 parts. This would have been obvious because the ordinary person skilled in the art would have
5 been motivated to provide users with customized software without imposing too much of a load
6 on the provider. In this combination, it would also be obvious that each block contained
7 information to be stored in a different location from the other blocks. This would have been
8 obvious because the ordinary person skilled in the art would have been motivated not perform
9 unnecessary computation during the update.

10 Regarding claims 45 and 58, the combination of Gafken, Arnold, Menezes, Hasbun, and
11 Hayashi disclosed forming a first message digest by applying a hash algorithm to said entry, and
12 forming a second message digest by signing said encrypted element associated with said entry
13 using a public key of said trusted server system, and determining that said first and second
14 message digests are identical (See Gafken Col. 12 Paragraph 7 Line 10 – Col. 13 Line 2).

15 Regarding claims 48 and 61, the combination of Gafken, Arnold, Menezes, Hasbun, and
16 Hayashi disclosed that information stored in said protected partition is compared to each entry in
17 said plurality of entries within said update partition, when a matching portion of said information
18 stored in said protected partition is found to be similar to said entry, said matching portion is
19 overwritten with said entry if space around said matching portion is sufficient, and when a
20 matching portion of said information stored in said protected partition is not found to be similar
21 to said entry, said entry is appended to said information stored in said protected partition if space
22 within said protected partition is sufficient (See the rejection of claim 38 above).

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i. Harmer (US Patent Number 5,835,760) disclosed a system which stores a BIOS in a Hard Drive and searches for portions in the BIOS to update.

ii. Zinger et al. (US Patent Number 6,836,847) disclosed that a Hard Drive could be used in place of Flash Memory.

iii. Jakubowski et al. (US Patent Number 7,080,249) disclosed verification of code blocks.

iv. Pitzel et al. (US Patent Number 7,062,765) disclosed individual downloading and verification of components.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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1 Information regarding the status of an application may be obtained from the Patent
2 Application Information Retrieval (PAIR) system. Status information for published applications
3 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished
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8 information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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15 Assistant Examiner
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17 10/16/2006


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